

THE  
Hydrography, Topography,

GEOLOGY, CLIMATE

AND

E P I D E M I C S,

OF

MONTGOMERY COUNTY, OHIO,

BY

H. GATCH CAREY, M. D.

DAYTON, O.

FROM THE TRANSACTIONS

OF THE

American Medical Association

FOR

1854.

Dayton Gazette, Print.



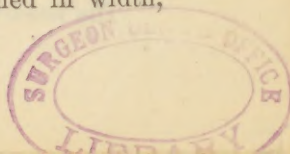
THE  
HYDROGRAPHY, TOPOGRAPHY,  
GEOLOGY, AND CLIMATE  
OF  
MONTGOMERY COUNTY, OHIO,  
AND THE  
EPIDEMICS

WHICH HAVE PREVAILED THEREIN FROM ITS FIRST SETTLEMENT TO 1854.

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**HYDROGRAPHY.**—In passing from its origin, near the center of this State, where its head branches interlace with those of the Scioto, to its confluence with the Ohio, the Miami river flows along the east border of Montgomery county, for three miles, then enters it and traverses its entire length, emerging at the middle of its southern limits. This is the principal water-course of the county, and the only one which passes through it—the others being tributary. The banks are usually alluvial, and retain the water at ordinary stages of the river.

The trough of the Miami, in Montgomery county, is from two to three miles in width, limited on one or both sides by a range of rugged hills of variable height. In the northern part, they are composed chiefly of quarry and silicious limestone, rising, in some places, fifty or sixty feet above the bed of the river. In the central portion, the point at which most of the affluents join the Miami, the hills recede, embracing an extensive basin. Here they are composed of drift, are uniform and gradual in their ascent, and terminate in rounded summits. As the southern section is approached, the valley is gradually diminished in width,





and is environed on either hand by steep and broken surfaces, underlaid with and consisting chiefly of blue limestone.

On the inclined planes reaching in both directions from the Miami, fountains of water burst out, forming streams varying in size from the gurgling rivulet, to the perpetual current affording from four hundred to five hundred gallons of water per minute. These are often precipitated over out-cropping crags, from five to fifty feet high, forming beautiful cascades.

Stillwater, the second river in magnitude in Montgomery county, enters the middle of its northern limits. Meandering to the southeast, through a country diversified by hill and dale, it joins the Miami one mile above the city of Dayton. This stream is broad and of considerable depth, flowing with a sluggish current. The bottom lands are about one mile in width, encroached upon in many places by diluvial cliffs of considerable altitude.

Removed from Stillwater, on the brows of hills capped with stratified rock, are some of the most permanent fountains found upon any of the tributaries of the Miami river. The waters, in passing from these springs, seldom produce much wet ground.

The district of country intermediate to Stillwater and the Miami rises several hundred feet. Resting here, are beds of drift of unknown thickness. These deposits being impervious to water and usually level, large sheets of surface water accumulate, and remain until removed by artificial drains or evaporation.

The table-land of the northwest portion of the county is subject, for like reasons, to accumulations of water. It is drained, however, to some extent by the incipient branches of Wolf creek, which, in passing to the Miami at Dayton, receives numerous spring branches and becomes a stream of considerable magnitude. The rivulets tributary to this watercourse are numerous, but they do not afford the same proportion of water to Wolf creek as those pouring into Stillwater. As great relative volumes are discharged from the fountains, but in many places, after running a short distance over impervious strata, the water passes upon beds of silt, and sinks. What has been said of these streams, is also applicable to Wolf creek itself. The materials of which its bed is composed, until within a short distance of Dayton, are impervious to water. Here detritus takes their place, and absorbs the stream; while sufficient water is found, three miles from its mouth, to propel considerable machinery.

The head-waters of Bear creek interlace with the tributaries of

Big Twin, which jointly drain the middle of the western and southwestern portions of the county. They are durable streams, and, like Wolf creek, originate in and are supplied by springs. From its source, Bear creek runs south 45° east, and empties into the Miami. Big Twin originates in Preble county, passes through the southwest corner of Montgomery, is more tortuous, and bears several degrees further west than Bear creek, joining the Miami five miles within Butter county.

On the east side of the Miami, Mad river is the largest and only stream of any considerable magnitude. It enters the eastern border of the county, above its middle, and flows with a strong current southwest, to Dayton. This stream is not wide, and the banks are liable to overflow.

Holes creek is formed by the aggregation of the spring branches of the southeast corner of the county. It is a permanent stream, and affords considerable water-power. Flowing to the northwest, it enters the Miami five miles south of Dayton.

Sugar and Beaver creeks are small water-courses which drain the middle of the south border of the county, and empty separately into the Little Miami, in Green county.

The Miami canal is an artificial channel of water forty feet wide and four feet deep. It enters the county on the north, in close proximity to the Miami river, and has been excavated along the west bank for three miles; then, crossing by an aqueduct to the east, it continues in the vicinity of the river to its exit from the county. In passing this distance, the canal has a lockage of one hundred and one feet. There is seldom any current or motion of its waters except that produced by passing boats.

Three miles from the mouth of Mad river, a dam has been thrown across the stream, diverting the water into a channel, which has been cut to Dayton. Through this a strong current is constantly passing—the water being used for manufacturing purposes. In addition to the above-named natural and artificial channels and collections of water, dams and races almost without number have been constructed, producing a greater amount of stagnant water than a mere description of the streams of Montgomery county would indicate.

The water used in the county for culinary and domestic purposes is highly surcharged with super-carbonate of lime, and is obtained from wells and springs. There are some fountains, however, containing sulphur and iron.

The crest of the water-shed dividing the Great and Little



Miami rivers, is situated about three miles within, and runs in a zig-zag direction along, the east line of the county.

TOPOGRAPHY.—Montgomery county is situated between the parallels of  $39^{\circ} 31'$  and  $39^{\circ} 39'$  north latitude, and  $7^{\circ}$  and  $7^{\circ} 9'$  west longitude from Washington; embracing an area of 437 square miles, and containing a population of 40,000. It is endowed with many of those natural and artificial objects which render the Mississippi valley the most diversified in the world. The flourishing cities and villages in which it abounds, its majestic rivers, meandering streams, and sparkling cascades, joined to gentle hills, rugged steeps, and arable lands, contribute no less to the grandeur of its landscape, than do its mounds, entombing the remains of giant forms, to the interest of American antiquity.

The surface of the country is undulating, marked in many places by high elevations overlooking adjacent valleys, which, with their tranquil water-courses as they stretch away and are lost amid distant hills and woodlands, support busy throngs, and contribute their means to the sustenance and thrift of a mighty nation; while, in other places, alluvial bottoms spread out for miles in unbroken plains, limited by gradual acclivities rising into rounded eminences, or disappear in the upland.

Most of the country is in a good state of cultivation, and yields largely to the toil of the husbandman: the remainder is generally inclosed and used for grazing.

The rivers and large creeks have usually three terraces rising one above the other, with an aggregate width of from one-half to three miles. These are situated commonly upon one side of the stream, while upon the other a range of hills approach almost to the water's brink, often changing their relative position to the water-course within a short distance. The first table from the stream is formed of marsh-ground and beds of sand, developing rank growths of vegetation common to such localities. The second is from eight to fifteen feet higher than the first, is composed of rich, black loam, and is remarkably productive of Indian corn. The third terrace is continuous with the table land of the country, and consists of vegetable mold and disintegrated substrata, intimately commingled; yielding small grain and grass in great abundance.\* The hills receding from the Miami river in

\* From 36,000 to 40,000 acres are annually cultivated in Indian corn, producing from 1,500,000 to 2,000,000 bushels, and about the same number of acres yield from 700,000 to 1,000,000 bushels of wheat annually.

the southern part of the county, which are composed of blue limestone, produce the grape in a high degree of perfection.

In the latter part of the last century, the first settlers found the district now composing Montgomery county, covered with dense growths of poplar, walnut, sugar maple, ash, oak, buckeye, beech, and underbrush, almost wholly shutting out the sun's rays from the surface of the earth. The high districts of the northwest part of the county were partly submerged, during most of the year, by surface water; and the springs, which in many instances were only marked by circumscribed spots of wet swamp land, as well as the streams leading from the stronger fountains, by the accumulation of vegetable substances, were often dammed up, producing stagnant pools, or diverting the water over bottom lands, which spread out, like a great sponge, to drink up the passing currents. The bayous leading to the streams and neighboring ponds often contained water all the year, yielding rank growths of aquatic plants. The rivers and creeks contained greater volumes of water than at present, and, during freshets, spread far and wide over the surrounding lowlands. They were not subject, as now, to failures on account of drouth, and remained swollen a long time after the fall of heavy rains.

With the progress of civilization, the forests have given place to vineyards, orchards, and gardens; artificial drainage has extended into the uplands, drawn off the water, and left extended meadows and arable fields; while the fountains, which spontaneously burst from almost every hill-side, have been opened out and their waters conducted in artificial channels to drive machinery, or to beautify yards and gardens in distant valleys. Thus, Montgomery county has been converted into one of the most productive districts of the Mississippi valley, and is capable of sustaining as dense a population.

The diseases with which the early inhabitants of this county were afflicted, consisted chiefly of inflammations and malarial affections, partaking largely of the latter form of morbid action. From the primitive mode of living and the exposure incident thereto, bronchitis, pneumonitis, pleuritis, gastro-enteritis, and rheumatism of a marked sthenic character, were the prevalent diseases of the winter and spring. In the treatment of this class of cases, the artillery of the materia medica were daily demanded. Armed with the lancet, antimonials, mercurials, blisters, and ca-



thartics, the general practitioner went forth to combat a common enemy, seldom requiring a more extended range of therapeutical agents.

Miasmatic diseases were annual in their visitations, and almost invariably produced fearful ravages upon the health and lives of the first settlers, few of whom escaped an attack of some character during the summer and autumnal months. Intermittent, remittent, and dysenteric fevers, with hepatic complications, embraced the most frequent forms of periodical affections. These were treated by the free and daily use of indigenous bitters and tonics, macerated in spirits, joined, in the early stage, to mercurials and active antiphlogistics. Copious depletion was indicated in very many instances, and borne remarkably well. Many cases demanded the frequent repetition of it.

As the forests were removed and the county drained, malarial affections became less frequent and less serious in character, and yielded more promptly to new modes of medication. The discovery of quinine, and its introduction here in 1824, produced an entire revolution in the treatment of autumnal fevers. It was first imported in quantities of a drachm,\* and prescribed in grain doses to those cases in which barks, from their bulk and nauseous qualities, could not be used. Its prompt action in arresting these diseases, inspired the practitioners with courage to increase the dose and extend the range of its use; until quinine is now often prescribed in scruple doses, and has taken the place of offensive and comparatively inert bark and alcoholic bitters, in the treatment of periodical seizures.

A strong proclivity to bowel affection preceded and followed the cholera of 1832, of which there were but few cases in the county. This predisposition continued, and was so much increased by the return of the disease in 1849, as to render the use of drastic and hydrogogue cathartics inadmissible in the treatment of disease, the type of which has since been so asthenic in character as seldom to require the use of the lancet, except in traumatic inflammations.

The excesses and dissipations incident to affluence undirected by sanitary regulations, have multiplied consumption and developed strumous affections beyond computation; and syphilis, a

\* It was sold at the rate of \$20 per oz.



disease scarcely known to primitive medicine, is almost daily met with in some of its protean forms, by the city practitioner. The multiplication of these affections among us, has brought cod-liver oil and preparations of iodine into constant use.

Milk sickness was formerly endemic along some of the water-courses in the eastern portion of the county, but it is now seldom met with. The cultivation of the land has entirely banished this mysterious disease.

There was a remarkable decrease of miasmatic disease in Montgomery county during the years 1849, 1850, and 1851; indeed, they almost wholly disappeared in those localities where cholera prevailed to any great extent during either of the above years. Considerable diversity of opinion existed in the minds of medical men who attempted to account for this phenomenon. I am disposed to refer it to the well-known law,—that no two epidemic or endemic influences, can operate upon and impress the same constitution with their peculiar natures, simultaneously; one or the other will take the ascendancy, to the subversion of the weaker rival.

In June, 1849, the atmosphere became surcharged with a poison which, in its operation upon the human economy, produced a train of symptoms and morbid changes, denominated cholera. For a short season this disease took the place of all others; after which it gradually declined, leaving its peculiar impress stamped upon all affections. The declining influence which lingered, and the established predisposition, were conjointly inadequate to the development of cholera, unless aided by an exciting cause; yet, they held the ascendant power over endemic morbid agents. During this time, diseases of the bowels were the prominent affections. The epidemic tendency and predisposition finally vanished, as was indicated by a great decrease of diarrhœa, with and without complications; and the endemics of this section have resumed, in modified forms, their former places.

Typhoid disease, until within the last few years, was only known to the physicians of this county as a single stage of certain affections. As an idiopathic fever, it first made its appearance in the winter of 1849–50, and has been increasing with considerable rapidity since that time.

After each successive epidemical visitation, which from time to time has swept over the county, disease has become greatly modified, losing most or all of those dynamic elements which de-

manded the interposition of active antiphlogistic medication. These constitutional revolutions appear, first, to have superadded a typhoid stage to bilious and pulmonic fevers; and, secondly, by their enervating influence upon the inhabitants, favored the multiplication of struma; and, thirdly, contributed in no small degree to the development of typhoid fever.

The changes which have taken place in the treatment of disease within the past half-century, and the remedial agents which at stated periods have been brought into popular favor for a season, and then consigned to a greater or less obscurity, are more the results of great pathological tendencies and variations in the prevailing types of disease, than of professional acumen or caprice.

GEOLOGY.—Carbonate of lime forms the principal ingredient of all the stratified rock in Montgomery county. These rocks have their similars in several groups of New York, and in the upper and lower Silurians of England. They consist of the following varieties, commencing the enumeration from below.

- 1st. Blue Limestone.
- 2d. Yellow Limestone, or Enerinital.
- 3d. Quarry Limestone, or Dayton Marble.
- 4th. Pentaminous, or Silicious Limestone.

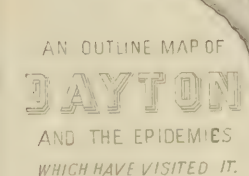
The first extends over about one-half of the county, forming the beds of all the rivers and creeks of any magnitude in the county, and immediately underlies beds of gravel and the soil of about one-half of the county. The second is coarsely crystalline, and unfit for building purposes. The third caps the water-shed between the Miamis, is of a light color, compact, and contains about ninety-two per cent. of carbonate of lime. This forms the most elegant and durable building material in the West. The silicious formation consists of thin, shelly strata, of a light drab color, breaks with a dry, earthy fracture, is situated in the northwest, and extends into the adjacent counties.

Resting upon these rocks, in place, and scattered profusely over the surface of the county, are diluvial beds of gravel and boulders, varying in size from grains of sand to irregular masses weighing several tons. Among these may be found representatives from most or all of the known series to the north of us.



# OF THE LAW OF OHIO

SHOWING THE GEOLOGICAL FORMATION AND THE EPIDEMICS  
WHICH HAVE PREVAILED SINCE ITS SETTLEMENT.







# CLIMATE OF MONTGOMERY COUNTY, OHIO

As exhibited by the Observations of LEVIS GRONEWIG ESQ<sup>r</sup>. Made at GERMANTOWN.

Time of Observation 6 O'Clock A.M.

2 O'Clock P.M.

10 O'Clock P.M.

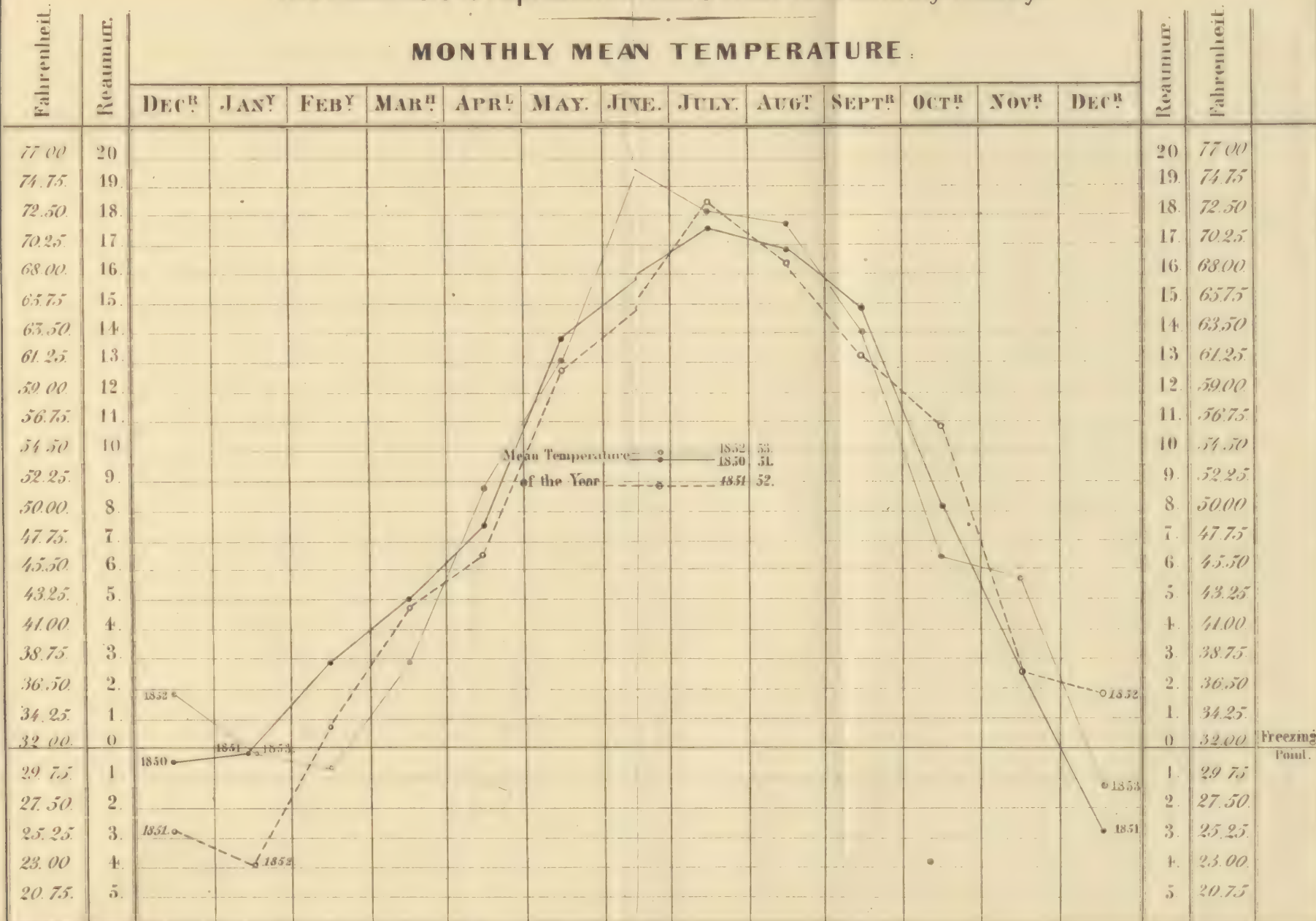
Latitude 39° 30' N.

Longitude 84° 20' W.

Height of Station above the Sea 720 Feet

The Cloudiness is represented from 0 clear to 10 entirely cloudy.

## MONTHLY MEAN TEMPERATURE.









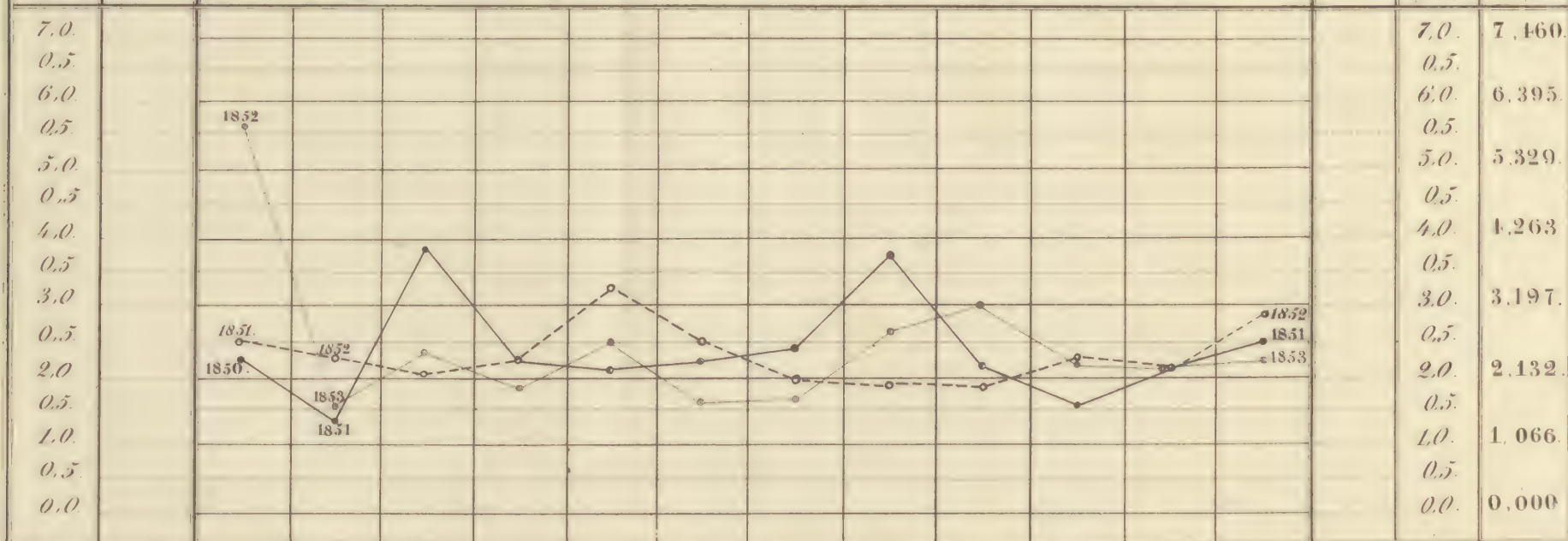
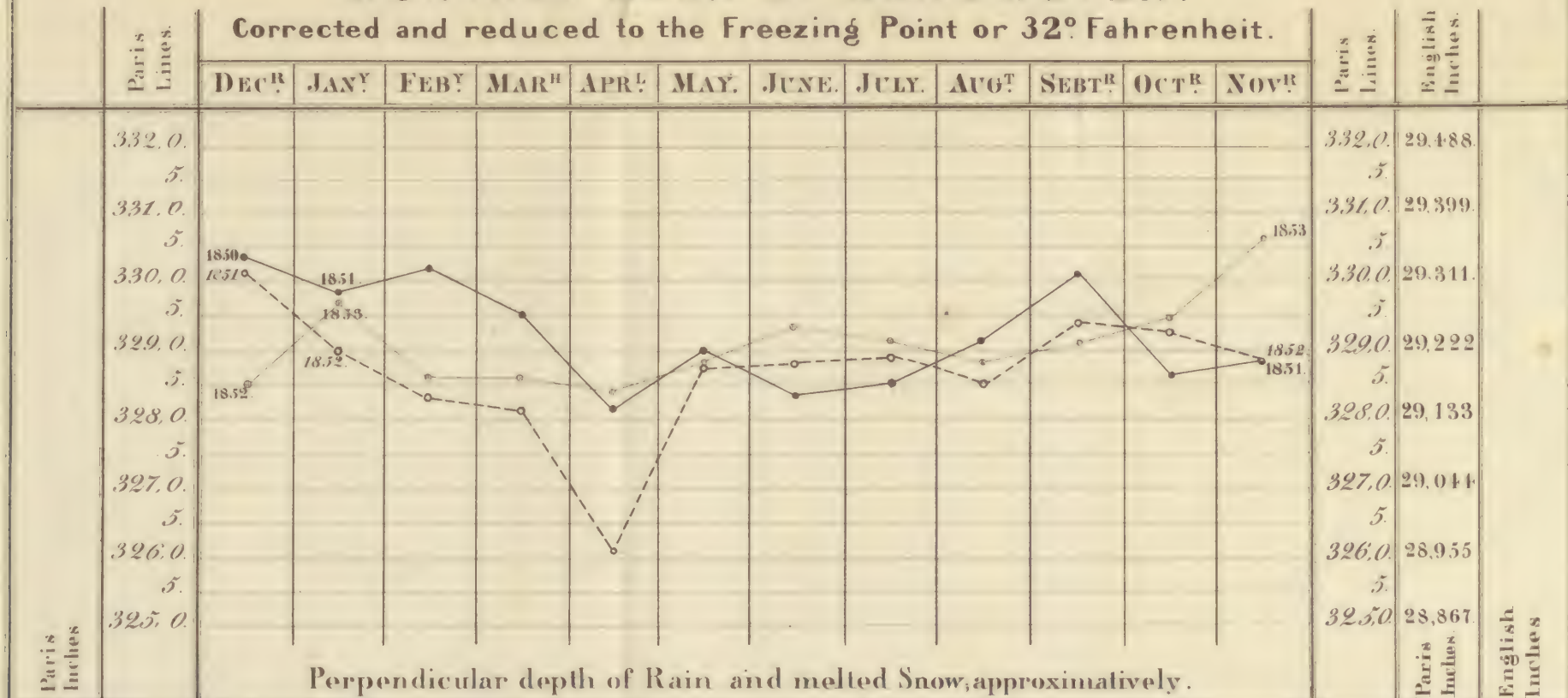
| METEOROLOGICAL YEAR. | BAROMETER CORRECTED AND REDUCED TO 32° FAHRENHEIT—ENG. INCHES. |          |          |            | FAHRENHEIT'S THERMOMETER, IN THE OPEN AIR AND SHADE. |          |          |            | DIRECTIONS OF THE WIND. |                            |               |              | Quantity of rain and melted snow. | Depth of rain and melted snow. | Relative humidity—per cent. | Force of vapor. Far. | NO. OF DAYS WITH |        |                 |      |             |           |               |       |
|----------------------|----------------------------------------------------------------|----------|----------|------------|------------------------------------------------------|----------|----------|------------|-------------------------|----------------------------|---------------|--------------|-----------------------------------|--------------------------------|-----------------------------|----------------------|------------------|--------|-----------------|------|-------------|-----------|---------------|-------|
|                      | Mean.                                                          | Maximum. | Minimum. | Variation. | Mean.                                                | Maximum. | Minimum. | Variation. | Mean.                   | Par.                       | cubic inches. | Far. inches. |                                   |                                |                             |                      | Mean.            | Lines. | Heat lightning. | Dew. | Frozen dew. | Dry mist. | Fog and mist. | Rain. |
| 1850-1851.           |                                                                |          |          |            |                                                      |          |          |            |                         |                            |               |              |                                   |                                |                             |                      |                  |        |                 |      |             |           |               |       |
| Winter, . . . . .    | 29.325                                                         | 29.977   | 28.520   | 1.457      | 33.57                                                | 63.50    | —        | 7.37       | 70.87                   | E: W=1:12.07. N: S=1:1.13. | 533.5         | 104.5        | 4.473                             | 62                             | 1.40                        | 13                   | 22               | 1      | 21              | 16   | 22          | 14        | 26            | 21    |
| Spring, . . . . .    | 29.213                                                         | 29.684   | 28.565   | 1.119      | 51.50                                                | 89.82    | 15.80    | 74.02      | 5.2                     | E: W=1:4.15. N: S=1:1.46.  | 521.3         | 4.5          | 3.649                             |                                |                             | 22                   | 9                | 21     | 16              |      |             | 11        | 32            | 5     |
| Summer, . . . . .    | 29.195                                                         | 29.470   | 28.724   | 0.746      | 60.80                                                | 91.40    | 43.92    | 47.48      | 4.8                     | E: W=1:3.00. N: S=1:3.35.  | 772.3         | 0.0          | 3.360                             |                                |                             | 22                   | 9                | 21     | 16              |      |             | 16        | 30            | 0     |
| Autumn, . . . . .    | 29.240                                                         | 29.684   | 28.680   | 1.004      | 51.12                                                | 94.32    | 17.37    | 76.95      | 5.2                     | E: W=1:1.81. N: S=1:1.77.  | 364.5         | 10.5         | 3.255                             |                                |                             | 6                    | 1                | 27     | 9               |      |             | 46        | 15            | 6     |
| 1851-1852.           |                                                                |          |          |            |                                                      |          |          |            |                         |                            |               |              |                                   |                                |                             |                      |                  |        |                 |      |             |           |               |       |
| Winter, . . . . .    | 29.240                                                         | 29.817   | 28.534   | 1.270      | 27.50                                                | 61.25    | —        | 31.45      | 92.70                   | E: W=1:2.09. N: S=1:2.18.  | 463.9         | 182.9        | 3.799                             | 52                             | 1.439                       | 1                    | 9                | 4      | 13              | 13   | 12          | 24        | 18            | 17    |
| Spring, . . . . .    | 29.090                                                         | 29.746   | 28.280   | 1.466      | 50.00                                                | 83.97    | 6.35     | 77.62      | 6.6                     | E: W=1:2.00. N: S=1:1.71.  | 702.9         | 4.0          | 4.578                             | 72                             | 3.110                       | 16                   | 4                | 13     | 13              | 12   | 24          | 18        | 17            | 5     |
| Summer, . . . . .    | 29.195                                                         | 29.533   | 28.513   | 0.720      | 69.12                                                | 94.35    | 37.11    | 57.38      | 4.7                     | E: W=1:1.83. N: S=1:1.72.  | 338.1         | 0.0          | 2.491                             | 76                             | 6.014                       | 27                   | 17               | 8      | 0               | 1    | 33          | 35        | 0             |       |
| Autumn, . . . . .    | 29.248                                                         | 29.684   | 28.659   | 0.995      | 51.80                                                | 97.57    | 15.35    | 72.22      | 6.4                     | E: W=1:1.43. N: S=1:1.36.  | 616.2         | 7.3          | 4.325                             | 51                             | 3.737                       | 7                    | 20               | 14     | 11              | 31   | 31          | 31        | 6             |       |





# MONTHLY MEAN OF BAROMETER.

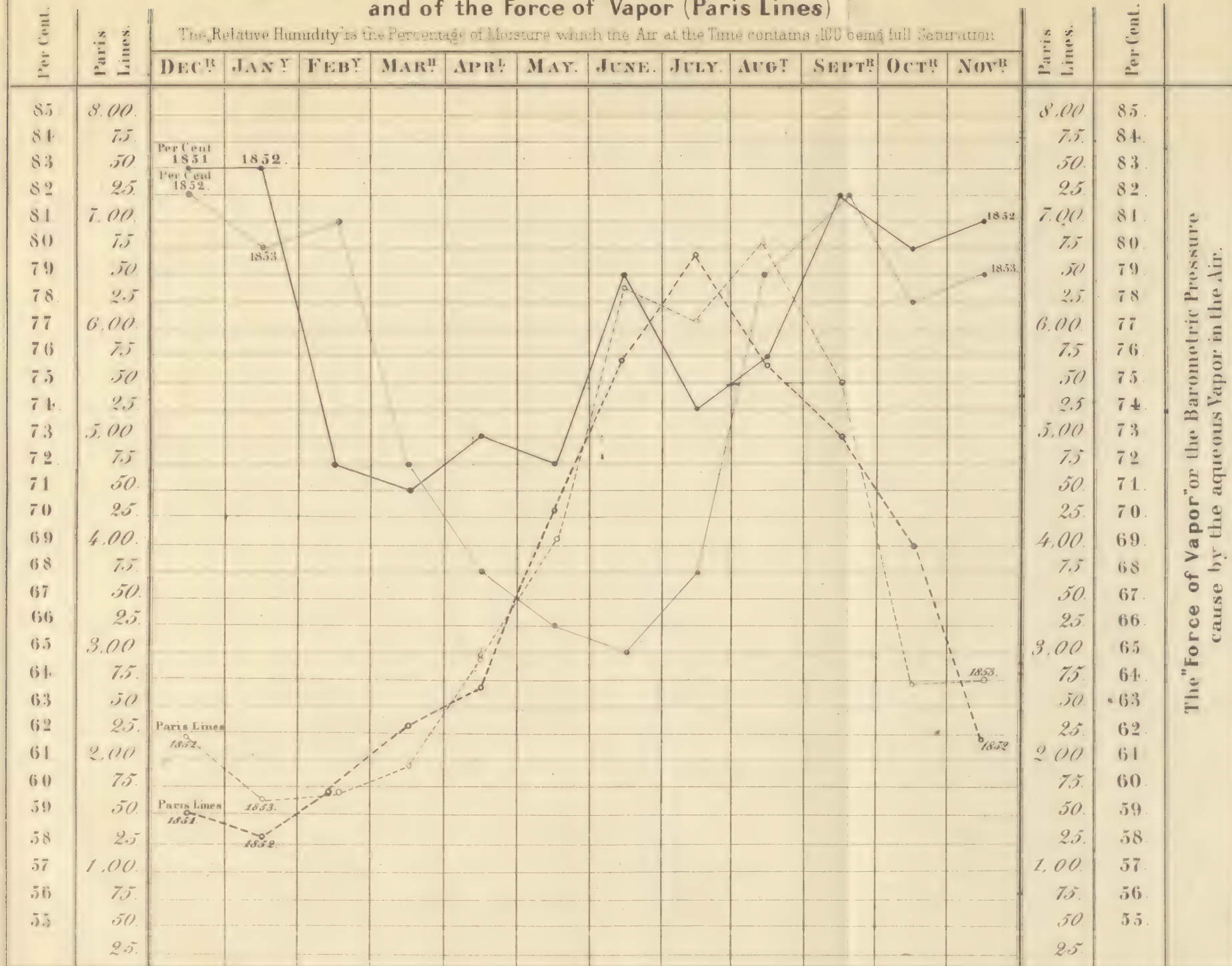
Corrected and reduced to the Freezing Point or 32° Fahrenheit.



# MONTHLY MEAN OF THE RELATIVE HUMIDITY (PER-CENT)

## and of the Force of Vapor (Paris Lines)

The Relative Humidity is the Percentage of Moisture which the Air at the Time contains 100 being full Saturation



The "Force of Vapor" or the Barometric Pressure  
cause by the aqueous Vapor in the Air.





| METEOROLOGICAL YEAR.               | ENGL. INCH.<br>BAROMETER, CORRECTED AND<br>REDUCED TO THE FREEZ-<br>ING POINT, OF 32° FAHREN-<br>HEIT. |          |          |            | OPEN AIR THERMOMETER-<br>FAHREHEIT. |          |          |            | WIND DIRECTION.<br><br>Monthly mean. | Relative humidity,<br>per cent. | Force of vapor,<br>pounds. | Number of Thunder-storms. | NO. OF DAYS WITH |             |               |       |       |           |
|------------------------------------|--------------------------------------------------------------------------------------------------------|----------|----------|------------|-------------------------------------|----------|----------|------------|--------------------------------------|---------------------------------|----------------------------|---------------------------|------------------|-------------|---------------|-------|-------|-----------|
|                                    | Monthly mean.                                                                                          | Maximum. | Minimum. | Variation. | Monthly mean.                       | Maximum. | Minimum. | Variation. |                                      |                                 |                            |                           | Dew.             | Frozen dew. | Fog and mist. | Rain. | Snow. | Dry init. |
| 1852-'53.                          |                                                                                                        |          |          |            |                                     |          |          |            |                                      |                                 |                            |                           |                  |             |               |       |       |           |
| December, . . . . .                | 29.177                                                                                                 | 29.689   | 28.565   | 1.074      | 38.27                               | 59.45    | 9.72     | 49.73      | N: S=1:4.60. E: W=1:1.41.            | 82                              | 2.97                       | 2                         | 1                | 0           | 7             | 6     | 12    | 8         |
| January, . . . . .                 | 29.284                                                                                                 | 29.898   | 28.807   | 1.501      | 31.55                               | 56.30    | 8.87     | 52.43      | N: S=1:1.35. E: W=1:1.30.            | 80                              | 1.561                      | 0                         | 0                | 0           | 11            | 4     | 6     | 7         |
| February, . . . . .                | 29.186                                                                                                 | 29.666   | 28.742   | 0.924      | 30.87                               | 54.27    | —14.12   | 68.39      | N: S=1:2.06. E: W=1:2.90.            | 81                              | 1.650                      | 1                         | 0                | 0           | 7             | 5     | 6     | 4         |
| March, . . . . .                   | 29.186                                                                                                 | 29.689   | 28.707   | 0.982      | 38.52                               | 60.80    | 9.72     | 60.08      | N: S=1:1.52. E: W=1:2.69.            | 72                              | 1.905                      | 1                         | 0                | 0           | 7             | 6     | 5     | 7         |
| April, . . . . .                   | 29.168                                                                                                 | 29.497   | 28.751   | 0.746      | 51.80                               | 78.57    | 21.90    | 57.37      | N: S=1:1.35. E: W=1:1.30.            | 68                              | 2.554                      | 8                         | 2                | 2           | 6             | 3     | 12    | 0         |
| May, . . . . .                     | 29.204                                                                                                 | 29.453   | 28.884   | 0.569      | 61.25                               | 80.60    | 28.55    | 60.65      | N: S=1:2.28. E: W=1:2.80.            | 66                              | 4.006                      | 7                         | 5                | 11          | 44            | 9     | 12    | 0         |
| June, . . . . .                    | 29.248                                                                                                 | 29.479   | 29.085   | 0.444      | 76.10                               | 97.47    | 41.00    | 56.47      | N: S=1:4.45. E: W=1:3.00.            | 65                              | 6.382                      | 10                        | 6                | 20          | 0             | 2     | 8     | 0         |
| July, . . . . .                    | 29.240                                                                                                 | 29.417   | 28.973   | 0.444      | 72.72                               | 92.97    | 45.05    | 47.92      | N: S=1:1.19. E: W=1:1.87.            | 68                              | 5.993                      | 4                         | 3                | 17          | 0             | 1     | 5     | 0         |
| August, . . . . .                  | 29.195                                                                                                 | 29.524   | 29.000   | 0.524      | 71.82                               | 92.75    | 46.85    | 45.90      | N: S=1:2.29. E: W=1:2.92.            | 79                              | 6.777                      | 10                        | 6                | 19          | 0             | 8     | 12    | 0         |
| September, . . . . .               | 29.248                                                                                                 | 29.488   | 28.840   | 0.648      | 63.50                               | 86.45    | 37.62    | 48.83      | N: S=1:1.61. E: W=1:1.23.            | 82                              | 5.545                      | 5                         | 5                | 214         | 0             | 12    | 8     | 0         |
| October, . . . . .                 | 29.257                                                                                                 | 29.595   | 28.680   | 0.906      | 46.62                               | 72.05    | 26.82    | 45.23      | N: S=1:2.26. E: W=1:2.07.            | 78                              | 2.737                      | 1                         | 0                | 2           | 48            | 7     | 6     | 0         |
| November, . . . . .                | 29.373                                                                                                 | 29.737   | 28.904   | 0.773      | 44.60                               | 67.77    | 22.32    | 45.45      | N: S=1:2.53. E: W=1:1.00.            | 79                              | 2.757                      | 0                         | 0                | 2           | 9             | 7     | 9     | 81        |
| Mean of the year 1852-'53. . . . . | 29.2305                                                                                                | 29.808   | 28.807   | 1.501      | 52.135                              | 97.47    | —14.12   | 111.59     | N: S=1:2.291. E: W=1:1.685.          | 75                              | 3.893                      | 149                       | 25               | 57          | 69            | 68    | 101   | 19        |
| December, 1853, . . . . .          | 29.213                                                                                                 | 29.566   | 28.565   | 1.021      | 29.07                               | 63.82    | 1.40     | 52.42      | N: S=1:1.84. E: W=1:3.00.            | 80                              | 1.484                      | 0                         | 0                | 0           | 9             | 8     | 7     | 5         |
| 1852-'53.                          |                                                                                                        |          |          |            |                                     |          |          |            |                                      |                                 |                            |                           |                  |             |               |       |       |           |
| Winter, . . . . .                  | 29.216                                                                                                 | 29.808   | 28.907   | 1.501      | 32.90                               | 59.45    | —14.12   | 73.57      | N: S=1:2.67. E: W=1:1.87.            | 81                              | 1.706                      | 3                         | 1                | 0           | 25            | 15    | 24    | 13        |
| Spring, . . . . .                  | 29.186                                                                                                 | 29.689   | 28.707   | 0.982      | 50.52                               | 89.60    | 9.72     | 73.83      | N: S=1:1.72. E: W=1:1.30.            | 69                              | 2.942                      | 16                        | 7                | 13          | 17            | 11    | 20    | 4         |
| Summer, . . . . .                  | 29.228                                                                                                 | 29.524   | 28.973   | 0.651      | 73.55                               | 97.47    | 41.00    | 56.47      | N: S=1:2.64. E: W=1:1.36.            | 71                              | 6.384                      | 24                        | 15               | 56          | 0             | 11    | 25    | 0         |
| Autumn, . . . . .                  | 29.293                                                                                                 | 29.737   | 28.689   | 1.048      | 51.57                               | 86.45    | 22.32    | 64.13      | N: S=1:2.13. E: W=1:1.43.            | 80                              | 3.680                      | 6                         | 2                | 18          | 27            | 26    | 23    | 1         |

\* March 23, the period of the last snow. † May 20, the period of the last frozen dew. ‡ October 8, the period of the first frozen dew.

§ November 9, small fall of snow. ¶ The numbers succeeding the reference on this line, are sums.

EPIDEMICS.—After hovering over, for some time, and occasionally producing fearful ravages upon, the American army then on duty along the northwest frontier, *typhoid pneumonia* appeared as an epidemic in the settlements along the Miami river, and at Dayton, in the winter of 1814; and returned at the same season, in 1815 and 1816. The attacks were ushered in by a severe chill, followed with imperfect reaction and profound congestion of the lungs, and subsequently of the brain. This stage was characterized by insensibility, a rapid failing of the pulse and vital energies, and a dusky, mottled appearance of the surface, which gave to the affection the name of "spotted fever." When the brain partook of the morbid action from the beginning, in many cases the patient died in eight or ten hours. In a majority of instances, however, this complication when present was secondary; death supervening from engorgement of the lungs, in twenty-four or forty-eight hours after the first manifestation of the disease.

Imitating the course of practice pursued by physicians of the army, alcoholic vapor-baths were relied on in the beginning, without success. Emetics, calomel, diffusible stimulants and revulsives, were depended upon by physicians in this section; while bold and frequent abstractions of blood, in the first stage, joined to derivation from the affected organ, proved more successful in the hands of neighboring practitioners, in relieving the suffocated action and equalizing the circulation; after which calomel and stimulating expectorants, were most efficient in overcoming the disease.

*Cynanche trachealis* followed in the wake of the preceding epidemic, and for some time was the bane of the nursery, affecting all of tender age, and proving fatal in one-third of those under four years. The symptoms were those of inflammation of the mucous membrane lining the trachea and bronchi, with fibrinous exudation. Dr. John Steele characterized it, as "one of the most vile and unmanageable affections which he had ever been called to combat." Occasionally it appeared as early as the third day after birth, and in these cases almost invariably proved fatal in a few hours.

The treatment consisted in the free use of mercurials, antimonials, revulsives, and the warm bath, carefully proportioned to the age and vigor of the patient. As the affection progressed, sedatives and expectorants often proved of great benefit.

In the autumn of 1818, *bilious remitting fever* assumed an



epidemic form, and became so violent as to present many of the symptoms of the yellow fever of southern latitudes. The attack was ushered in by rigors of variable duration, followed with high febrile reaction and determination of blood to one or more of the great trisplanchnic viscera. When the liver was the seat of the congestion, in addition to the phenomena usually presented by remitting fever, a uniform yellowness of the surface, varying from a pale to a deep orange color, supervened, often within twelve hours after the first stage of the disease had passed, and death speedily followed. When the *onus* of the disease was upon the brain, meningitis usually closed the scene in twelve or twenty-four hours.

If the violence of these local actions could be subdued, the fever often in two or three weeks began to remit, and the exacerbations became less distinct, until convalescence was finally established at the end of the fourth, sixth, or eighth week. The sequelæ of these later cases were chronic inflammation of the nasal cavities, with a copious discharge of sanies, greatly to the annoyance and discomfort of the patients; and protracted cough, often controlled by antispasmodics.

The characteristics of this epidemic were, a great demand for antiphlogistic medicines, and tolerance of them. Almost every day, from the commencement of the disease, patients required the abstraction of blood, to prevent local accumulations. General depletion was carried to an almost unprecedented extent; ten, fifteen, twenty, and even thirty bleedings being performed during the continuance of a single attack—and the patient recover. Tartrate of antimony and potassa was borne, in combination with calomel, in doses of eight and ten grains, without nausea. The daily use of the cold-bath proved the most efficient means of subduing the fever, and with tonics in the latter stage of the disease, would ultimately restore health.

In the fall of 1821, *congestive fever* prevailed extensively in Dayton. The most prominent symptoms were, excessive nausea and vomiting, obstinate constipation, abdomen tumid without tenderness, capillary circulation languid, pulse slow and compressible, skin cool. Venesection was the only means which promptly overcame the persistent nausea and vomiting. In many cases the abstraction of eight or ten ounces of blood\*

\* Dr. John Hains informs me that the blood, when drawn from the arm in the first bleeding, strongly resembled the expressed juice of the poke berry.

induced syncope, which was followed in a few hours by high reaction, demanding a repetition; when a much larger amount of blood could be taken, greatly to the relief of the patient. The free use of mercurial cathartics, preceded by the above course, converted these highly dangerous and complicated cases into simple forms of fever, which yielded without much trouble. If blood-letting, however, was omitted, gastro-enteritis soon followed, and often proved fatal.

An epidemic of *bilious remitting fever* visited the valleys of Stillwater, Miami, Mad river, and the intermediate country, in the autumns of 1823 and 1824. The disease was highly inflammatory the first, and often ran into an intermitting form of fever during the second year.

Along the valley of the Little Miami and its tributaries, reaching into Montgomery county, epidemic *dysentery* occurred in the autumn of 1824. But little can be ascertained concerning its nature, further than that it followed an inundation of the low lands, was very extensive, and fatal.

*Scarlet fever* appeared in Montgomery county, for the first time, in 1831. It prevailed extensively for some months, confining itself principally to childhood, and resulted fatally in two-fifths of those who suffered. The first case terminated in death, in twelve hours. The epidemic presented the following peculiarities, viz., prostration of strength and early coma, rash, great tumefaction and sloughing about the throat and glands of the neck, and speedy dissolution. The medication consisted in the use of ipecacuhana as an emetic, diaphoretics, and, after the first twenty-four hours, tonics and stimulants. As local applications, solutions of nitrate of silver, the sulphates of iron and copper, nitric acid, chlorine, and fomentations externally, were the usual remedies.

*Spasmodic cholera* first visited Dayton in 1832. The disease was prevailing in Cincinnati. A boat with twenty-four German emigrants arrived here from that city, on the 23d of June. One was dead when they landed, and eight others were laboring under the disease. Seven of them never recovered. The remaining sixteen were all attacked, but finally recovered, with the exception of one infant. Two of the three nurses—infirm, dissipated men, died; the third had cholera, but was saved. The disease did not extend.

Epidemic *influenza* was a very general affection during the

spring of 1833, but required little medication. In July of this year, cholera again returned to Dayton. The disease was not general, nor very fatal, only about forty citizens dying from it. Venesection was tested in this visitation, with no very satisfactory results. Calomel, stimulants, astringents, and revulsives were the most reliable means of treatment.

*Erysipelas* made its appearance in October, 1843, at Dayton, and continued in an epidemic form until the following May. The disease was confined mainly to adults—pregnant females being most obnoxious to its influence. Premature labor was often induced, followed by fatal peritonitis. Few parturients escaped. In the male, the mouth, face, and head were the favorite seats of the affection. Most commonly, it commenced with tumefaction of the tonsils, uvula, and mucous follicles of the fauces. It extended to the organs of voice, producing aphonia, and, in some cases, death by suffocation. The tissues of the tongue became enormously distended, protruding the organ from between the lips. At an early stage of the disease, it assumed a dark brown, or black color, was dry, and its surface marked with numerous fissures, penetrating deeply into its structure.

In these cases, the disease extended to the face and scalp, invading the deep-seated cellular tissue. This was followed by meningitis, and death. *Erysipelas*, in some instances, manifested itself upon the side or tip of the nose, and spread from these points. Injuries and slight scratches, however insignificant, were sufficient to develop the disease; and it almost invariably became phlegmonous. An adynamic tendency was uniformly present. In some rare instances, the affection was apparently contagious; in others, no connection whatever could be traced between the recent and the preceding cases.

In the early stage of the disease, when the morbid action invaded the fauces and was confined to the throat and buccinal cavity, great dependence was placed upon emetics, cholagogue cathartics, alterants, and diaphoretics; with the application of a saturated solution of argenti nitras to the inflamed mucous membrane. As the affection progressed, the faltering energies of life demanded the early use of tonics and stimulants, of which camphor, quinine, and carbonate of ammonia were mostly used. Tincture of iodine, solutions of nitrate of silver, sulphate of copper and of iron, and the linamentum calcis, were favorite local



applications to the surface, with different practitioners. All, however agreed upon the use of alterants, tonics, and stimulants, and free incisions into the tongue and other inflamed parts, to favor the exit of effused fluids, purulent matter, and sloughs, which formed at an early stage of the disease.

*Peritonitis*, associated with or depending upon this epidemic, was treated by calomel, turpentine, oil, preparations of opium, and fomentations. Few recovered.

In the northeast, northwest, and southeast corners of the county, epidemic erysipelas prevailed the same year as the above. It was less fatal in its results, but affected more generally the inhabitants of the infected districts, than did the epidemic at Dayton. The disease in these rural districts was migratory, and generally cutaneous. In some instances, in children, the affection, after appearing either idiopathically or from the effects of mechanical injury, extended from part to part, or from limb to limb, until the entire surface was involved. Most of the idiopathic cases were first affected in the fauces; but the disease extended to the mouth, producing a thickened condition of the mucous membrane and tumefaction of the gums, strongly allied to ptyalism. The follicles and the salivary glands were stimulated to a copious secretion of viscid mucous. From the mouth, the disease extended to the face, the scalp, and often to the integuments of the trunk and extremities.

As at Dayton, pregnant females advanced in gestation were exceedingly prone to premature labor, and the period of accouchement was looked to by the patient and physician with the deepest anxiety and solicitude. But one female, within the range of my information, escaped. She took the precaution to secure the services of a neighboring physician, without the infected district, and had a speedy "getting up." All, however, who were attended during labor by the practitioners under whose care most of the erysipelas came, died,—in some instances, as early as twelve hours after delivery. Dr. Gish, of Salem—the point at which the disease prevailed in the northwest—thinks that puerperal peritonitis spread in a manner very like a contagious affection.

Dr. Taylor of Carrolton, resided six miles from the infected district, on the southeast, and visited it daily, administering to the afflicted inhabitants. At the same time, he was engaged in a large obstetrical practice at home, yet not a single case of peritonitis occurred among his patients during the prevalence of the

epidemic. One case, however, was developed, and proved fatal, in his neighborhood, and a mile further removed from the infected region. The patient was attended by a midwife, upon whose wrist there was a small scratch, which subsequently became erysipelatosus.

Antiphlogistics were borne in these localities better than at Dayton. When carried to any great extent, however, the cases were invariably aggravated. In the southern part of the county, the treatment was simple and in most instances successful; and, of three hundred cases which occurred in and about Salem, all recovered. As local applications, tincture of iodine to the surface, and nitrate of silver, in solution, to the inflamed mucous membranes, proved worthy of the high confidence placed in them, for controlling the disease under consideration. Unguents to the affected parts, or surrounding the disease with vesicated surfaces, invariably enhanced the difficulty and favored the extension of the erysipelas. Our venerable friend, Dr. Strong, of Centreville, being somewhat indisposed, and experiencing slight hoarseness and pain in deglutition, applied a blister to the region of the trachea. The epidemic was just manifesting itself at that time in the village where he resided. The blister drew, but speedily took on erysipelatosus action. Thence it extended to the face and scalp, putting his life in extreme jeopardy for some time.

With the best-directed efforts, puerperal peritonitis was uniformly fatal.

A remarkable visitation of epidemic erysipelas prevailed in 1844, extending from the valley of Bear creek, three miles from its mouth, east of south, across the Miami river to Alexandersville; a distance of four miles. The lateral margins of this epidemic were one and a half miles removed from each other, and exactly parallel; passing over districts of country essentially different in their character and condition.

The disease was not of so grave a nature as that of the preceding year, but partook of many of its characteristic peculiarities. Peritonitis occasionally occurred, and in all cases proved fatal.

The treatment pursued in this epidemic did not differ essentially from that of 1843.

In the northwest corner of the county, and chiefly confined to the valleys of the various branches of Wolf creek, *malarial fever* appeared as an epidemic in the autumn of 1843. The affection

assumed every possible type, from the simple tertian intermittent, interrupting the physiological laws but for a few hours, to the gravest forms of continued and congestive fevers, speedily resulting in dissolution. It was almost universal: four-fifths of the inhabitants of the above-named region were down, with some of the modifications of this affection, at one time. The rigors were more grave in their character and more numerous, to the windward of the streams, than in other localities. In almost every instance, the secretions were disordered; but after the use of quinine, in full doses, they resumed their natural condition, without any special medication for that purpose. This article proved to be the *remedium magnum*, in controlling every form of the disease. General depletion appeared to favor the return of the paroxysms, to which there was a strong proclivity; and they could be avoided only by the exhibition of a few doses of quinine, every seventh, fourteenth, and twenty-first day.

An epidemic of *erysipelas* prevailed in Germantown, and its western vicinity, from January to May, 1847. The disease was malignant in its character, proving most fatal in low, wet localities. In a majority of instances, it made its appearance in the fauces, in the form of an erythematic blush, which, in a few hours, gave place to sloughing ulcers. These extended rapidly, until the palate and the soft parts about the posterior nares were entirely destroyed. In the graver forms of this affection the constitutional symptoms were uniformly of a typhoid type.

When the disease invaded the surface of the body, either idiospathically or following physical violence, it seldom resulted in serious consequences to the patient. In some cases, however, the inflammation extended to and destroyed the deep-seated cellular tissue of the extremities. The mortality was one in twenty.

Medication did but little in arresting or controlling the progress of the disease. In plethoric and robust habits, it often assumed a highly inflammatory character, and antiphlogistics were freely used, with preparations of iodine and nitrate of silver as local applications. In those cases which became typhoid, quinine, mineral acid, and ammonia, were liberally prescribed, and stimulating gargles applied to the throat at short intervals.

During the prevalence of this epidemic, four cases of puerperal peritonitis occurred, and all terminated fatally.

As early as the first of April, 1849, the harbingers of *spasmodic cholera* made their appearance in Dayton. The first case of



this disease was brought from an infected district, Cincinnati, on the 18th of May, and proved fatal. The disease did not extend. The second arrived here in June, and recovered. The patient stopped at the Farmers' and Mechanics' Hotel. The affection spread to the members of the household, and proved fatal to a few of them. The house was now closed. Several of the persons who had been its occupants, took the disease soon after leaving. In some instances these cases formed nuclei, from which the affection appeared to be propagated; but in most, there was no connection between them and those that followed. A merchant from a neighboring town dined at the Hotel while the disease was in the house, returned home in the evening, and died the next day, in about twenty-four hours, with cholera. From this case the epidemic extended.

For six weeks, cholera prevailed in Dayton and some of the neighboring villages. Its visitation was severe, and the disease assumed all the various phases which are characteristic of this fearful affection, in its severest forms. Few entirely escaped the effects of its influence. The ratio of mortality has not been ascertained. In a great majority of instances, there was not sufficient evidence to warrant the conclusion that the disease was propagated by contagion. In others, the most indubitable facts were furnished, establishing its infectiousness. In its progress, it passed over the entire city of Dayton, producing much greater ravages in some sections than in others. Among that class of persons who paid the necessary attention to regimen, cleanliness, and ventilation, it never proved contagious, unless a predisposition was established through fear or mental depression of some kind, in which case it was fearfully fatal. On the other hand, where all hygienic and sanatory laws were disregarded, scores crowding together in ill-ventilated apartments, and subsisting upon innutritious, crude articles of diet, it became contagious in an eminent degree, carrying off whole families in a few hours.

All varieties of treatment were tried, and after the disease was fully developed, with about equal success.

In the winter of 1848, *membranous angina* prevailed as an epidemic among children, upon the high land in the southeast quarter of the county. In some instances it was periodical, but in none was there any considerable fever. Without expressing any great inconvenience from the presence of diphtheritic exuda-

tions lining the posterior nares and fauces, or desisting from their usual sports, the little sufferers were often suddenly seized with hoarseness and difficulty of breathing, from an extension of the disease to the larynx, and expired in an hour from asphyxia. The rapidity with which the disease ran its course was truly appalling, and the mortality, devastating whole nurseries in a few hours, humiliating to the *ars medendi*.

Emetics and chologogue cathartics, with the free use of nitrate of silver, in solution, to the affected parts, arrested the disease promptly in its early stages, and proved the most reliable remedies when it was more advanced. The membranous concretion, after the use of this local application, could be removed without difficulty, exposing a florid unabraded surface, which, in the course of a few hours, would be again covered with the fibrinous exudation.

Epidemic *scarlatina* prevailed in Salem and Germantown, and their respective vicinities, in the spring of 1849. It was confined to childhood, and was usually simple in its nature. There were several cases of the anginous variety, in which no eruption was present. Some of these proved fatal in the latter place, in two hours after the first manifestations of the disease. The mortality was about ten per cent.

An emetic, in the early stage of the disease, subserved a very important end. This, with mercurials, stimulating gargles, and diaphoretics, was the usual routine of treatment.

*Dysentery* is endemic to an extensive district intermediate to the valley of the Miami and the west line of the county. In the autumns of 1849 and 1852, it became epidemic. The discharges, in some cases, almost amounted to hæmorrhage from the bowels. Calomel, sugar of lead, opium, and injections of mucilage containing laudanum, were the most reliable remedies.

In the fall of 1850, dysentery, preceded by diarrhœa and fever, appeared as an epidemic on the second terrace of the Miami river, commencing where the stream enters the county, and extending four miles to the south. Inflammation of the rectum and colon was of a high grade, protracted in its nature, and accompanied by fever of a remitting type. From the inception of the disease, biliary derangement was one of its prominent features. Tormina, tenesmus, and retention of urine were among the most constant symptoms, and those most afflicting to the patients. The disease was not fatal in its nature.

Emetics of ipecacuanha, in the formative stage of the disease, followed by a few doses of some preparation of mercury and of opium, often restored the health of the patient in a few days. More frequently, however, there was a necessity for protracted medication, of which narcotics, diaphoretics, and alterants were the leading articles, alternated with castor oil and turpentine in cathartic doses. Quinine was used with benefit in some cases.

Cold applications to the abdominal region during the first stage, followed in the next by blisters, proved the most efficient revulsives. Injections of mucilaginous fluids rendered cold by ice, were very grateful to the patients, as well as the most effectual means of arresting the tormina and tenesmus.

The inhabitants in the south and the northwest portions of the county, were visited by epidemic dysentery during the summer and autumn of the preceding year. It, however, prevailed more extensively, and was less amenable to medication. There was little tympanitis or tenderness over the abdominal region at any period during the progress of the disease. The discharges were frequent, small, mucous, and streaked with blood, in the first stage of the affection; but as the cases progressed, copious evacuations of blood often took place. In most instances, the disease was protracted in its course.

The treatment, in the southern part of the county, consisted in the use of gentle mercurials, followed by rhubarb as a cathartic, with vegetable astringents, absorbents, carminatives, and mucilaginous injections containing laudanum. Alkaline baths were used daily. Castor oil was inadmissible on account of its griping effects. In the northwest section, profuse blood-letting, large doses of opium frequently repeated, small anodyne injections, fomentations to the abdomen, and the recumbent position, were the means most successful in controlling the affection. When the cases assumed a chronic form, small portions of spirits of turpentine and tincture of opium did much towards restoring health.

*Typhoid*, or *enteric fever*, was epidemic in 1851, at Germantown, and in its suburbs. Diarrhœa usually supervened on the second or third day after the appearance of the fever, previously to which the bowels were exceedingly sensitive to cathartic medicines. After the third day, bowel affection almost invariably supervened; in some instances rapidly prostrating the vital energies, and inducing a state of collapse from which the patients could only be restored by the most prompt and energetic meas-



ures. A majority of the cases, however, were, in men, often controlled by medication, and, although running a somewhat protracted course, finally terminated in convalescence. The fever was of a low type, with regular evening exacerbations. There was great uniformity in the development, progress, and decline of the different cases; all running through the same stadia, and occupying about the same number of days. No treatment instituted appeared to exert any marked influence in cutting short the disease.

Mild alterants, diaphoretics, opium, quinine, camphor, astringents to restrain colliquative diarrhœa, and revulsives, constituted the treatment.

July 5th, 1852, a female arrived in Dayton, from Sandusky, where *spasmodic cholera* was prevailing at the time, with symptoms of the disease. She put up at an Irish boarding-house, and in a few days was restored to health. On the 8th of the same month, her nurse was attacked by the disease, and died in the evening. Two inmates of one room, and one of another—laborers upon the Dayton and Western Railroad, who made this house their place of lodging—were also attacked, and died before morning. Three other attacks occurred in the same house within the next ten days, and terminated fatally in a few hours. In these instances, the affection was confined to the Irish population. The house was large, and contained a great number of small rooms; each of which, in the department occupied as a boarding-house, served as a dormitory for six or eight persons, upon whom the epidemic preyed with great violence. Every case terminated fatally. Although in the midst of a dense population, the disease did not extend beyond the precincts of the boarding-house.

*Cutaneous erysipelas*, amenable to medication, made its appearance in the autumn of 1852, on the east side of the Miami river, in the northern part of the county, and extended to the table-land reaching into Miami county. The disease commenced with rigors, followed by high febrile reaction, and pain in the parotid and sub-maxillary regions. In twenty-four or thirty-six hours the characteristic blush appeared upon the surface, and exhibited a strong disposition to extend. The secretions of the chylo-poietic viscera were greatly perverted or wholly suspended, associated with tumefaction of the throat. The fever was sthenic in character.

When the disease of the skin was limited in extent, a vesicated surface, surrounding it, would arrest it. If, however, the erysipelatous action had invaded the face and scalp, tinct. iodine proved the most successful in arresting the morbid process. The constitutional treatment consisted in correcting the vitiated secretions, by the use of alterants, sedatives, and diaphoretics.

After being developed in a family, the disease exhibited a strong proclivity to extend, and in many instances it attacked every person in the house. Peritonitis was not of frequent occurrence. One case proved fatal five days after accouchement. The attending physician had recently recovered from an attack of erysipelas, and at the time, was daily visiting patients affected with it.

On reviewing the diseases which have occurred in Montgomery county, in 1853, I find that a certain class of cases extended through the entire year, with some degree of uniformity; others, depending upon transient causes, were confined to a limited period; while all, during the summer and autumnal months, exhibited the perturbing influence of malaria. Affections referable to the effects of this agent upon the animal economy, were largely in the ascendancy over any other one form of morbid action, sustaining to the whole number of seizures, about the following proportions; *viz.*, July, 1 to 6; August, 1 to 4½; September and October, 1 to 1; November, 1 to 5; December, 1 to 10.

The first quarter of the year, was remarkable only for an absence of the usual number of inflammatory affections common to the above-mentioned period. The inhabitants enjoyed a remarkable exemption from disease.

The first half of the second quarter presented several varieties of skin diseases, of which *rubeola* and *roseola* were the most prevalent. These, when uncomplicated, usually required but little medication.

*Cholera infantum* made its appearance about the middle of June, and ran high in the numerical scale of disease for the third quarter, furnishing more than an average number of cases over any one of the five preceding years. One-fourth of all the cases treated by me, in July, August, and September, were "summer complaint." After attaining its acme of prevalence, about the middle of July, this affection gradually declined, and

entirely disappeared late in September. Some of the first cases were complicated with rubeola and roseola, which greatly enhanced the inflammatory element of the cholera infantum. During the month of August, dysentery occasionally became engrafted upon this disease—usually the result of injudicious medication, or improper, crude articles of diet.

This affection was not confined to the city and large towns, but prevailed indiscriminately throughout the county; there having been about as great a relative number of infants attacked in the rural districts, as in Dayton.

Mercurials, antacids, and anodynes, are the articles most frequently used in the treatment.

I, however, place more confidence in sugar of lead and morphia, in controlling "summer complaint," than in any other combination. The former exerts a soothing, sedative influence upon the stomach and bowels by contact, and upon the heart and arteries by sympathy. In the first stage of the disease, from one half to two grains, given every hour or two in a drachm of some aromatic tea, usually arrests the nausea and spasm of the stomach, and suspends the action of the bowels, in a few hours. Five drops of a solution containing ten grains of sugar of lead to the ounce of water, is often retained when all other articles are rejected with vehemence. I generally add morphia to the above, when it fails, after a few hours, of accomplishing the object desired. The latter, when carefully adapted to the age and condition of the patient, rarely fails, in my hands, of effecting a speedy cure. Morphia and bicarbonate of soda exert a most salutary influence in cases which are aggravated by the presence of acid in the *primæ viæ*. I have rarely found it necessary to push mercurials to any considerable extent. When their use is indicated, calomel appeared to be the most eligible preparation.

I have learned to rely upon revulsive, or derivative medication, both in the acute and the chronic forms of cholera infantum, with a confidence second to that entertained for few other adjuvants. Mild sinapisms and stimulating embrocations to the abdomen, are efficient elements in the treatment, while tepid alkaline baths, in the early stages, will often equalize the vascular and nervous influences, abate the fever, and suspend the disorder of the stomach and bowels, when all other methods of treatment fail. After this, the appropriate remedies may be administered to ensure a speedy restoration.



When this disease assumes a chronic form, an arid, furfureous state of the skin is one of the formidable barriers to ultimate convalescence. Nothing will remove this condition half so speedily and effectually as saline baths and friction to the surface, morning and evening.

Injections were occasionally found highly valuable in the latter stages of the disease, but seldom subserved any important end in the first.

Hydrocephalus occasionally supervened upon the first, but most frequently upon the third stage of cholera infantum. From the great difficulty of diagnosis in the inception of this affection, and the imperfection of our knowledge concerning it, few cases were saved.

In this connection, I may add, that about the 20th of October—one month from the time I saw the last case, and during a period of hot weather in the Indian summer—cholera infantum reappeared and was quite prevalent for several days. The cases were by far the most obstinate of the season, and demanded a more liberal use of mercurial preparations than those which occurred earlier.

In the southern part of the county, along the valley of the Miami, and extending as far north as Alexandersville, *dysentery* ushered in the third quarter of the year. After prevailing for a short time sporadically, the affection became epidemic and continued with great virulence throughout the season. A majority of the cases were among children. It was exceedingly fatal. When it supervened upon previous acute disease—as, for, example, cholera infantum, the prognosis was exceedingly unfavorable. Such patients rarely, if ever, recovered. The same relative mortality did not obtain among adults.

In this latitude, we have periodical diseases to contend with during most or all of the year; yet, they are much more prevalent at certain seasons than at others. *Intermittent* and *remittent fevers*, and *dysentery*, made their appearance about the first of July, and were the prominent diseases of the following quarter. A majority of the first class of cases were among persons under fifteen years of age, and remarkable only for their mildness and strong proclivity to return on the seventh, fourteenth, and twenty-first days. In some instances, these periodicities were announced by convulsions, but most of the cases were uncomplicated, and yielded promptly to quinine. To ensure a speedy convalescence

and prevent a return of the paroxysm, the daily use, for a fortnight, of some tonic and anti-periodic medicine, was indispensable. Different preparations were in favor with different practitioners. Among those most worthy of confidence, may be enumerated iron, gentian, arsenic, strychnia, and sulphate of zinc.

Bilious remitting fever is becoming less frequent and severe. During the past year it was only met with occasionally. The cases were mild, uncomplicated, and yielded in a few days to medication.

The first idiopathic case of typhoid fever in Montgomery county, concerning which I can obtain any definite knowledge, occurred in Dayton in December, 1850. It was well marked, and terminated favorably after four weeks. From that time, the disease was only of occasional occurrence, until the first of October, 1853, when the cases became more frequent; and now, are almost of daily occurrence in and about the city of Dayton. It has been the leading disease of the fourth quarter of the year. It thus far, has been rather mild in character, running through its various stages with much uniformity. Few deaths have occurred in proportion to the number of attacks. In its formation, it presents two varieties. In the first and most frequent, there is general *malaise*; anoraxia; pain, more or less severe, in the head, back, and lower extremities; indistinct rigors, alternating with flushes of heat, which last but a few moments; dry, harsh skin; tongue covered over the dorsum with a thin, light-yellow fur, substance of the organ often enlarged; bowels torpid or constipated. During this stage, the circulation often remains undisturbed. All these symptoms, and especially those pertaining to the nervous and the vascular system, are greatly aggravated in the evening and night. Occasionally, however, after running on in this manner for a few days, the exacerbations may change to the morning. These symptoms increase in severity from seven to ten days, when the vascular system begins to sympathize in a marked manner, the pulse assuming a uniform frequency, ranging from 100 to 110.

Superadded to all these, in the second form of supervention are catarrhal symptoms. The fauces and pharynx, as far as the parts are visible, are of a scarlet color, and there is slight hoarseness of voice and frequent cough, with mucous expectoration.

In some of the milder cases, the above symptoms continue without any essential melioration or aggravation—with the excep-

tion, perhaps, of a disappearance of the rigors—throughout the entire course of the affection, which occupies from four to eight weeks. In rare instances, the patients are able to sit up, and even go about the room, several hours of each day. The characteristics of these cases are, quick, frequent pulse, ranging from 110 to 120 beats per minute; dry, red tongue; torpid bowels; skin dry and above the natural temperature; absence of appetite and prostration of the vital energies.\* Some attacks have been so mild, and the transition so imperceptible, that it became no small task to determine the precise time of departure from health, or that at which convalescence was established.

The graver forms of typhoid fever, however, leave no grounds for ambiguity, concerning their true character and tendencies. After passing through the formative stage, without exhibiting any marks, during this period, indicative of the perilous proclivity of the affection, these cases gradually, though perceptibly, grow worse. The coat upon the tongue thickens, assuming a brown or black color; tenacious mucous and, eventually, sordes accumulate about the teeth and lips; and colliquative diarrhœa, and profuse hæmorrhage from the bowels occasionally supervene as the disease advances. The skin assumes a tawny, muddy hue; it is dry, and above the natural temperature; the pulse is compressible, and ranges from 120 to 145\* in the minute. At an early stage of the disease, the patient manifests a lack of interest in, and attention to, surrounding objects, associated with delirium in the evening. These mental aberrations increase as the disorder advances; the sufferer lies in a dreamy, abstracted state, occasionally giving utterance to vague and unmeaning sentences. When aroused from this condition—and, in some instances, it can only be accomplished with difficulty—he answers questions in monosyllables, soon relapsing into his former unconsciousness. At this period, subsultus and floccitation, and gurgling, and occasionally tenderness over the right iliac fossa, are present. Meteorism has existed in a few instances, but it is not by any means a uniform accompaniment of the disease. On the contrary, the abdomen is retracted until the anterior walls are in juxtaposition with the spine, and on exposing the parts, the pulsations of the aorta and its larger trunks are very distinctly visible. Some patients

\* This frequency of the pulse exists only where there is pulmonic complication.



remain in this condition ten, fifteen, or twenty days, without any perceptible change.

I have not been able to satisfy myself of the existence of typhoid eruptions at any stage of the disease. In one instance, I thought I could detect a few rose-colored spots over the præcordial region, but was by no means certain. Their presence was obscured by the discoloration of the skin.

In no instance, to my knowledge, has diarrhœa been present from the beginning of the disease. The bowels are usually torpid, but susceptible to the action of cathartic medicine. After the first ten days, or until the disease has attained its acme, in a majority of cases, frequent, liquid stools are passed, of a dark-brown color and offensive odor. This looseness of the bowels lasts only a few days, and has not generally been difficult to control. If it be checked, the bowels subsequently require to be moved by the action of medicine. In several of the milder cases—and, by the way, they are often very protracted—I have had occasion to prescribe aperients every second or third day, for weeks in succession. Healthy and well-molded evacuations are often had from the bowels, many days before the patients are able to sit up, or the mind resumes its lucidity.

The indications of returning health are, cleaning of the tongue, commencing at the tip and margins; natural moisture of the mouth; and decreasing temperature of the skin. When the process of unloading itself begins at the dorsum of the tongue, and progresses by patches or scales falling off at once, leaving a red, dry surface, the dangers of a protracted convalescence, or unfavorable termination of the case, are much enhanced. In most or all of the cases, the pulse retains its preternatural quickness until the patient is able to go out. The skin continues dry, and becomes furfuraceous as the patient recovers.

Quinine will not arrest the progress of typhoid fever; nor will mercurial preparations, however judiciously and perseveringly administered, always save the patient's life. I have tested the virtues of the former, most effectually, in those forms of enteric fever in which the remissions were the most perfect, joined to every other circumstance in the early stage of the disease, calculated to favor its action upon the constitution,—but without any beneficial effect. On the contrary, it appeared to enhance the dryness of the skin and redness of the tongue, and favor the development of the disease. Quinine is a most valuable auxiliary in the treatment of this affection; but it must be confined to

the latter stages, and be given in combination with camphor and other adjuvants, as a tonic. Its benign influences are here manifested in doses varying from one half of a grain to two grains.

Preparations of mercury are indispensable to the successful treatment of some forms of this fever; but I have seen more than one patient die, who at the time was legitimately pyralized. I know of no other remedies that will correct the vitiated secretions with half the certainty of mercurials. They must form the basis of every prescription designed to operate upon the liver and the mucus follicles of the intestinal canal.

Correct the secretions, restrain the diarrhœa when present, sustain the faltering energies of life as the disease advances,—and the active duties of the physician are at an end. He must wait. The treatment of typhoid fever is essentially tentative.

*Small-pox.*—During the four months ending May 1st, 1854, there have been about fifteen cases of small-pox and varioloid in the city of Dayton; and according to my best information, two deaths from the former disease. A majority of the cases occurred among the Jews, and did not come under the supervision of regular physicians. These affections were mild in character, and presented little intrinsic interest. In a few instances, a protracted ophthalmia has been entailed upon the patients, threatening destruction to distinct vision. In some villages and neighborhoods west of Dayton, small-pox and varioloid have prevailed quite extensively of late. In these rural localities, they were only limited by want of material in which to reproduce themselves.

*Vaccination.*—Vaccine disease has been communicated very frequently in this city since the 1st of January, 1854. Nineteenths of the cases had never been submitted to the influence of cow-pox. But little trouble, as a general thing, was necessary on the part of the physician, to obtain the characteristic pustule in those persons who had not been vaccinated before. Occasionally, however, a person was met with, whose system was proof against the poison. Nineteen-twentieths of the patients who had not been vaccinated previously, were under twelve years of age. It was rare, indeed, to find more than one or two children unprotected in any family, who, for any length of time, had employed a regular physician. Three, four, and in some instances as high as half a-dozen, were occasionally met with in the same domestic circle, who had never been vaccinated; but, without a single exception, these persons had been in

the habit of changing their physicians frequently, or uniformly patronized quacks. Persons of foreign birth were found more uniformly protected against small-pox, and set a higher estimate upon the protection of vaccination, than American citizens. The skepticism of the latter, could be traced directly to imperfections in cow-pox poison, or want of proper care and attention to vaccination.

Of those persons who had sought protection, re-vaccination was successful in a greater proportion of cases during the period under consideration, than usual. Some who had failed repeatedly in their attempts, took cow-pox upon the application of the virus. An explanation of this fact, is found in the existence of an atmospheric predisposition to small-pox during the past winter. Variola has prevailed more extensively throughout the United States during the past six months, than at any former period in the range of medical history.

Cow-pox is the mildest form of variola known; and when its legitimate influence has been exerted upon the human economy, it affords as perfect immunity from the poison of small-pox, as this disease itself. The frequency of varioloid depends upon imperfect vaccine virus. It is not a question of any consideration how the matter is inserted, so it gains access to the tissues of the skin, and is permitted to remain. The results will be the same. I have not met with any person whose system, by re-vaccination, would not become proof against the poison of cow-pox.\* In some instances, it requires the virus to be inserted several times. After the first or second operation, however, a perfect pustule can rarely be produced by vaccination.

The physical phenomena of a most perfectly-formed cow-pox pustule, is no safe guarantee that it has afforded perfect protection to the system. Appearances of the most characteristic cicatrix, are equally fallacious. Extensive local inflammation is incompatible with genuine prophylaxis. These cases produce the largest scar. A depressed cicatrix, from four to six lines in diameter, with uniform margins, and having its central portion studded over with *miniature pock marks*, is the best presumptive evidence that the constitution of the individual possessing it is protected against the poison of small-pox; yet these persons often

\* This remark requires qualification. I know a physician who contracts varioloid as often as he is exposed. Vaccination always takes.



contract cow-pox or varioloid. Occasionally, vaccination does not produce sufficient local inflammation to leave a relic of its former existence after a few months, and still exerts its specific effects. Re-vaccination is, therefore, the only certain test. In a vast majority of cases, the re-insertion of the virus will produce no other results above an ordinary scratch, if the poison was pure in the first instance, and the cow-pox pustule permitted to run through its regular stages undisturbed. Another class of persons, though greatly in the minority, are susceptible to the influence of vaccine virus a second, and in some rare instances a third and even a fourth time. The pustules, in these cases, sustain to the genuine cow-pox the same relation that those of varioloid do to true small-pox. Vaccination, then, should be repeated as often as the insertion of unadulterated vaccine virus will produce a vesicle; after this, such persons will ever remain protected against the contagion of small-pox. Inoculation will not even produce the disease.

Protection from vaccination does not run out. The molecular change in the human constitution is so slow, that if it is once brought under the influence of cow-pox each new atom of matter, on becoming assimilated and deposited as an integral part of the organism, will have imparted to it a principle exempting the same from the poison of small-pox. This is the broad, catholic rule, to which there are as few exceptions as any other one entering into the control of nature.

Vaccine virus will lose its virtue after being exposed a short time to the influence of the atmosphere, and an elevated temperature. The condition of the poison will favor this process of deterioration. Small quantities and thin sheets of virus, cannot be preserved longer than a few days, if submitted to a temperature above 65° Fahrenheit, in the open air. This, however, is not the case with matter in the scab, if the pustule which produced it was large and well formed. The external covering soon becomes oxydized, and assumes a light ashy color; while the interior nucleus will retain its mahogany hue and specific virtue for months. Virus can be preserved in this way much longer, and in a state of greater purity, than on quills or mineral points.

"Matter" cannot be kept pure in a liquid state longer than a few hours. In the vaccine Hospital, Brainbridge,\* virus was

\* London Lancet.

taken from a well-formed pustule in the arm of a healthy child, on the eighth day, and preserved in glass tubes hermetically sealed. Forty hours after, the lymph was inserted into the arms of two children, one of which died of gangrene; and the other survived phlegmonous abscesses of the axilla, elbow, wrist, and other parts of the body. Sir Thomas Wakeley and Mr. Wilson examined the pus, and gave it as evidence before a Court of Inquest, that "it had become perfectly decomposed." A scab was dissolved in water, and preserved between two glass plates, by a friend of mine, to facilitate vaccination and economize time. The pustules following the insertion of this matter for the first twenty-four hours, did not present any thing peculiar. Those persons who were vaccinated from it after this period, had extensive inflammation of the arm surrounding the point of insertion, occasionally extending to the body and tips of the fingers. In some instances, sloughs half an inch in diameter formed in the site of the puncture, associated with erysipelas of the extremity. Cow-pox poison can be preserved pure almost indefinitely, if properly excluded from the atmosphere. This may be done perfectly, by enveloping it in gutta percha, rendered plastic by heat.

As long as cow-pox matter retains the ability of producing a vesicle from the third to the fifth day, and an umbilicated pustule in six days thereafter, its protecting power against variola is just as perfect as though the poison producing it had been procured directly from the cow. If its virtue has become enfeebled by age, passing the virus through the constitution of a healthy child will restore it. If proper care be given to the selection of subjects, cow-pox poison may be reproduced in the human subject, *ad infinitum*.

In several instances, during the past season, the vesicle did not make its appearance until the eleventh day after the insertion of the virus. Upon the day designated above, a minute point made its appearance, and was followed by all the physical manifestations of genuine cow-pox. I have never seen pustules more characteristic. The virus from these pustules produced the usual phenomena of unadulterated vaccine virus in other individuals, and at the regular period.

A vesicular eruption attended vaccination in several instances. The vesicles were situated upon inflamed bases, and scattered over the entire body: some of them became as large

as a split pea. The vaccine pustule, in these cases, was usually small, though distinct and well formed. Phlegmonous erysipelas followed the insertion of vaccine virus in a few cases, some of which were protracted and exceedingly painful to the patient. These departures from the regular course of vaccination did not depend upon any imperfection in the virus used. It was recent, and produced the usual results in other persons.

The virtue of vaccine virus is not impaired by passing through the system of the negro race.\*

*Scarlatina*.—Since the first of January, scarlet fever has prevailed as an epidemic in the eastern districts of Dayton. But few cases occurred west of the canal. These were usually mild, and in no instance fatal. In the former localities, the disease was quite malignant. Several cases proved fatal in six hours after the first manifestations of a departure from health. These were among the first attacks. The symptoms in these cases, were those which follow a powerful shock of the nervous system, produced by some potent morbid agent. In a great majority of the fatal cases, death occurred between the second and tenth days. Whatever phlogistic elements these cases might present in the beginning, after the first or second day a decided adynamic tendency uniformly supervened. The eruption in many of the fatal cases was fluctuating, often appearing and declining several times during twenty-four hours. In all of these cases, throat and skin symptoms were combined. The tissues of the pharynx never sloughed, nor did pus form in the glands about the neck. The pulse indicated the ingress of a powerful animal poison into the system. Delirium, of a low muttering character, was rarely absent. Convulsions occasionally preceded death. Organic lesions of the soft parts about the throat were not adequate to the fatal issue of these cases.

The patients which recovered from this form of scarlatina, began to convalesce from the sixth to the tenth day. Engorgement of the soft parts about the throat and the eruption upon the skin, sustained an inverse relation to each other. Some of the cases were protracted, and entailed upon the patients afflicting and fatal sequelæ.

\* A recent number of the Western Lancet contains a paragraph to the following effect, viz: "Vaccine virus is destroyed by passing through the negro constitution." This statement is either the result of gross ignorance or a willful perversion of facts.



In another class of cases, constituting about one-fourth of the whole number, the eruption was absent. These patients presented the characteristic pulse, papillated tongue, and lesion of the fauces, varying from an erythematic blush, to an engorgement of the tonsils and soft parts, almost closing the passage from the mouth to the stomach. In very many cases, the tonsils met in the median line, forcing the uvula forwards upon the base of the tongue, or backwards into the posterior nares. The mucous membrane covering these parts, was of a bright vermilion color, but seldom ulcerated. Pus never formed in the sub-mucous structure. Swelling of the external tissues and glands of the neck, was occasionally present. The skin was uniformly hot, furfureous, and devoid of moisture. As soon as the perspiratory function was established, the other symptoms declined rapidly. For many weeks after all other local symptoms had declined, and the little patient had returned to its accustomed pleasures, the tonsils often remained much swollen.

In addition to symptoms already detailed, the following conditions conclusively demonstrate these cases to have originated from the poison of scarlatina:—

1st. The anginose and cutaneous varieties prevailed in different members of the same family, simultaneously.

2d. An anginose case was capable of communicating to a second person the cutaneous form of the disease, and *vice versa*.

3d. These cases were always followed by desquamation of the cuticle, and, in very many instances, by regular sequelæ of scarlet fever.

4th. In every case, the patients presented the characteristic pulse and tongue of the disease under consideration.

The sequelæ of scarlatina were the following,—the enumeration being made in the order of their frequency:—

1. Desquamation of the cuticle. This was present in almost every instance, including those in which there was no eruption.

2. Anasarca and ascites were uniformly the result of exposure to cold and damp air. The most obstinate cases of these varieties were those following the cutaneous form of scarlet fever.

3. Ottorrhœa more frequently supervened after the anginose than the cutaneous cases. In one instance, convulsions preceded the discharge of matter from the external ear.

4. Hydro-thorax and hydrops pericardii were occasional sequelæ.

5. Croup and pneumonia frequently occurred in those persons who had formerly had either disease.

6. Suppuration of the parotid and sub-maxillary glands, in scrofulous subjects.

7. Cerebro-spinal meningitis.

8. Ulceration of the cornea.

9. Suppuration under the tendon of the occipito-frontalis muscle.

The treatment of this disease was based upon general principles, and it must be confessed that the results were not satisfactory. Some patients died before remedial assistance could be interposed. Others lingered from day to day, without exhibiting any satisfactory results that could be attributed to the action of the medicine. Most of the milder cases, however, were benefited by gentle cathartics, diuretics and diaphoretics, and a solution of nitrate of silver in water to the throat. There was nothing peculiar in the treatment of the sequelæ. They were much more amenable to medication than the original disease.

*Rubeola.*—In some parts of Dayton and neighboring districts of country, measles has been quite common during the past three months. All who have not had the disease, irrespective of age, have in many places contracted it. As a general thing, the youthful portion of the community has not suffered to any serious extent. Those advanced in life, however, have had the disease quite severely in many instances. In those persons predisposed to pulmonary difficulty, or who at the time of the seizure, were laboring under an affection of the lungs, the existing elements of disease were enhanced by an attack of measles.

In a few rare instances, mental derangement preceded and followed the appearance of the eruption. Unquestionable insanity, in one case, lasted several weeks after it had disappeared. Retention of urine in adults, demanding the use of the catheter, was occasionally present. A much larger proportion of persons have had rubeola, during the recent visitation, than usual. Quite a number of individuals have had it, of late, for the second time.

Inflammation of the lungs was the most frequent complication. The accession of pulmonary congestion or inflammation upon the decline of this disease, has in several instances proved fatal. I have nothing new to offer in reference to the treatment of measles.

*Roseola.*—During the prevalence of the preceding skin dis-

eases, roseola, among infants and adults, has been quite a common disease. In many instances, it scarce interrupted the usual avocations; in others, only producing temporary inconvenience, requiring little medication.

H. G. CAREY.

*Dayton, Ohio, May 1st, 1854.*